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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,432	07/17/2003	Gary A. Strobel	34373/0007	4064

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Michelle Samonek, Agraquest, Inc
1530 Drew Avenue
Davis, CA 95618

EXAMINER

MARX, IRENE

ART UNIT	PAPER NUMBER
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1651

MAIL DATE	DELIVERY MODE
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07/01/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/623,432	Applicant(s) STROBEL ET AL.	
	Examiner Irene Marx	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 101-105 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 101-105 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The amendment filed 5/24/10 is acknowledged. Claims 101-105 are being considered on the merits.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 101-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herting *et al.* (U.S. Patent No. 3,895,116) taken with Rehnig *et al.* (U.S. Patent No. 5,968,964) and Saksena *et al.* (Acta Microbiol Hung. 1987;34(3-4):255-7).

The claims are directed to a method of inhibiting the growth of microbes on post harvest food such as fruit and vegetables by applying a composition comprising isobutyric acid and 2-methyl-1-butanol in certain amounts.

Herting *et al.* disclose a method of applying a composition comprising isobutyric acid among other volatiles to fruit or vegetables to inhibit growth of one or more microbes. See, e.g., Table 1. It is noted that corn botanically speaking is a caryopsis or dry fruit, Moreover, peanuts are also fruit. The container is a polyethylene bag (col. 7, paragraph 1).

The reference differ from the claimed invention in that the use of 2-methyl-1-butanol is not disclosed. However, Rehnig *et al.* teach a method of inhibiting the growth of microbes on post harvest food such as fruit and vegetables by applying a composition comprising isobutanol and 2-methyl-1-butanol. See, e.g., col. 4, lines 13-65. It is noted that the percentages provided in the reference correspond to those claimed (col. 4, lines 60-65). Even though in Rehnig the mixture contains an antifungal compound, this is encompassed by the open language of the invention as claimed. In addition, Saksena *et al.* teach the antifungal effects of 2-methylbutanol and 3n-butanol without and with isobutanol on common plant pathogens.

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The process conditions discussed in the references appear to be substantially the same as claimed. However, even if they are not, the adjustment of process conditions for optimization purposes identified as result-effective variables cited in the references would have been *prima facie* obvious to a person having ordinary skill in the art, since such adjustment is at the essence of biotechnical engineering.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of Herting *et al.* of applying a composition comprising isobutyric acid to fruit or vegetables to inhibit growth of one or more microbes by adding further volatiles to the composition such as 2-methyl-1-butanol as suggested by the teachings of Rehnig *et al.* and Saksena *et al.* for the expected benefit of inhibiting the growth of harmful microbes such as fungi on post harvest food for economic and environmental concerns.

Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Applicant argues that Herting differs in the use of 10% isobutyric acid from the claimed 5%; that the combination of this compound with 2-methyl-1-butanol is not taught; and that that there is not motivation to use a mixture as claimed.

However, motivation can come not only from direct teaching of the prior art, but also the nature of the problem to be solved and/or the knowledge of persons of ordinary skill in the art, Ruiz v. A.B. Chance Co. 357 F.3d 1270, 69 USPQ2d 1686 (2004). The cited references are in the same field of endeavor and seek to solve the same problems as the instant application and claims, and one of skill in the art is free to select components available in the prior art, *In re Winslow*, 151 USPQ 48 (CCPA, 1966). Further, the examiner recognizes that references cannot be arbitrarily combined that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references, *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. One test for combining references is what the combination of disclosures taken as a whole would suggest to one versed in the art, rather than by

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their specific disclosures, *In re Bozek*, 163 USPQ 545 (CCPA 1969). In this case, the use of volatile components such as isobutyric acid and 2-methyl-butanol known in the art, and used for their known art specific properties, in different combination and amounts is considered to be obvious in the absence of evidence to the contrary.

Note still further that, contrary to applicant's argument, it is well established that motivation for combining references need not come from the references themselves, as long as applicant's disclosure is not improperly used in a hindsight reconstruction of the claimed invention. See *Ex parte Levengood*, 28 USPQ2d 1300 (1993), at 1301. ("Motivation for combining the references need not be explicitly found in the references themselves. Indeed, the examiner may provide an explanation based on logic and sound scientific reasoning that will support a holding of obviousness.")(Citations omitted).

In this instance, the secondary reference provide motivation to add further volatile antifungal compounds. For example, Rehnig *et al.* teach a method of inhibiting the growth of microbes on post harvest food such as fruit and vegetables by applying a composition comprising 2-methyl-1-butanol and another compound, i.e., isobutanol. See, e.g., col. 4, lines 13-65. It is noted that the percentages provided in the reference correspond to those claimed (col. 4, lines 60-65). In addition, Saksena *et al.* teach the antifungal effects of 2-methyl-1-butanol without and with isobutanol on common plant pathogens. Therefore, one of ordinary skill in the art would have recognized that 2-methyl-1-butanol is effective in combination with other compounds as an antifungal, including, isobutyric acid, which is closely structurally related to isobutanol.

In addition, while applicant argues a concentration of 10% vs. 5% isobutyric acid, the invention as claimed is directed to a composition comprising "about 5%" isobutyric acid which adds at least some uncertainty to the amount intended to be claimed, and certain approximate concentrations of 2-methyl-1-butanol. In addition, applicant has not demonstrated unexpected results for the combination(s) as claimed as compared with the closest prior art with objective evidence in a side-by-side comparison. It is also noteworthy that the sole results obtained as shown in the specification pertain to *R. solani*, a specific fungus on specific media, while the claims are directed to inhibition of growth of all microbes in post harvest food. The only specific fungus as claim designated is *P. expansum*.

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The scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. In re Dill, 202 USPQ 805 (CCPA, 1979), In re Lindner 173 USPQ 356 (CCPA 1972), In re Hyson, 172 USPQ 399 (CCPA 1972), In re Boesch, 205 USPQ 215, (CCPA 1980), In re Grasselli, 218 USPQ 769 (Fed. Cir. 1983), In re Clemens, 206 USPQ 289 (CCPA 1980). It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claim.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Irene Marx/
Primary Examiner
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